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**INSPEC - 1969 to date (INZZ)**

#### Accession number & update

6377106, A1999-22-6148-002; 19991101.

#### Title

An alternative structure for C/sub 576/.

#### Author(s)

Cash-G-G.

#### Author affiliation

US Environ Protection Agency, Washington, DC, USA.

#### Source

Fullerene-Science-and-Technology (USA), vol.7, no.5, p.733-41, 1999. , Published: Marcel Dekker.

#### CODEN

FTECEG.

#### ISSN

ISSN: 1064-122X, CCCC: 1064-122X/99/ (\$10.00).

#### Availability

SICI: 1064-122X(1999)7:5L.733:ASC; 1-4.

#### Publication year

1999.

#### Language

EN.

#### Publication type

J Journal Paper.

#### Treatment codes

T Theoretical or Mathematical.

#### Abstract

Carbon **nanotubes** with rollup vector indices equal, i.e., (n, n) **nanotubes**, are calculated to be metallic **electrical** conductors. Several years ago, a toroidal fullerene structure, C/sub 576/, was proposed and suggested to possess a small bandgap on the basis of its having approximately half of its atoms arranged as in a (4,4) nanotube. A more recent calculation determined that this structure has a very large anisotropic ring-current diamagnetic susceptibility and is therefore likely to be a good **electrical conductor**. The present work proposes an alternative structure for C/sub 576/ which is

constructed entirely from six copies of a C/sub 96/ fragment of a (4,4) nanotube. (21 refs).

**Descriptors**

carbon-nanotubes; fullerenes.

**Keywords**

alternative structure; C576; C **nanotubes**; rollup vector indices; metallic **electrical** conductors; toroidal fullerene structure; bandgap; anisotropic ring current diamagnetic susceptibility; C96 fragment; 4 4 nanotube.

**Classification codes**

A6148 (Structure of **fullerenes** and fullerene-related materials).

A3640B (Geometrical structure of clusters).

**Chemical indexing**

C576 el, C el.

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